

REMARKS

The Examiner is thanked for the careful examination of the application. However, in view of the remarks that follow, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejections. The independent claims have now been amended to remove a previously added feature.

Art Rejections:

Claims 1, 2, 6 - 8, 12, and 22 - 24 have been rejected under 35 U.S.C. §102(e) as being allegedly anticipated by U.S. Patent No. 6,766,056, hereinafter *Huang*.

One of the objects of the present invention is to provide an *efficient* method for determining whether or not an image has a specified pattern. In one embodiment, the present invention achieves these goals by selecting certain pixels and binarizing the target pixel into one of two data values. As can be seen in Figures 5 and 6, a target pixel and pixels specifying conditions are illustrated. Only the target pixel and other related pixels satisfying certain conditions are used as the basis for the color data when binarizing the target pixel into one of two data values.

In order to minimize the number of related pixels selected, the present invention includes a storage unit for storing a first condition that defines absolute positions of pixels in the image and a second condition on positions of pixels relative to a target pixel.

In *Huang*, the eight bit image data 21 is fed into the pixel buffer pipe 42. The image data 21 is sub-sampled in accordance with instructions from the sub-sample control 41, and data concerning the "lag pixels", i.e., pixels 4 - 7, are sent to the

threshold determining unit 45, so that the threshold determining unit 45 can set a foreground threshold value. See column 7, lines 5 – 7. Based on the threshold value, the "current pixel" 0 is encoded into a data value from 0 to 7, which is expressed by 3 bit data. See column 7, lines 52 through 65.

The pixel buffer pipe 42 of *Huang* has two functions. The first function is to subsample the input image data 21 to a predetermined resolution. See column 6, lines 19 – 26. The second function is to determine the threshold value for the foreground. See column 6, lines 50 – 54.

The Examiner alleges that *Huang* teaches the claimed "first condition" by its description of how the pixel buffer pipe subsamples the image based on subsampling signals received from the subsample control module 41. The Examiner alleges that the pixels in the pixel buffer pipe 42 are the result of the subsampling, and are only a subset of the original pixels.

However, that interpretation is incorrect and is contradicted by the teachings of *Huang*. *Huang* does not teach at what timing the pixel buffer pipe subsamples the input data. And, at column 6, lines 55 – 58, with regard to the determination of the threshold of the foreground, *Huang* teaches "Turning to FIG. 5 there is shown a representation of a plurality of consecutive pixels 55, of a current scanline of the input image data 21, temporarily stored in the pixel buffer pipe 42." Thus, it is clear that at least the determination of the threshold of the foreground shown in FIG. 5 is performed on the as-received input image data 21 (56) inputted to the pixel buffer pipe 42. Accordingly, the determination of the threshold of the foreground shown in FIG. 5 is NOT performed on the subsampled image data. It is performed on the input image data 21. Thus, the pixel of interest (0) and the "lag" pixels (4 – 7) for

generating the foreground threshold to be compared with the pixel of interest are obtained as "a plurality of consecutive pixels 55 of a current scanline", i.e., the original input image data. Accordingly, the pixels in the pixel buffer pipe 42 are not subsampled, as alleged by the Examiner, and thus do not meet the claimed "first condition".

This conclusion is also confirmed by the fact that *Huang* teaches that the subsampling instructions 50, 51 are applied to the pixel buffer pipe 42, and not to some location upstream of the pixel buffer pipe 42.

Since *Huang* does not teach the claimed first and second conditions, the claims 1, 2, 6 – 8, 12, and 22 – 24 are not anticipated or suggested by *Huang*.

With regard to claims 4 and 10, the Examiner has relied on *Huang* in view of *Bloomberg*. The Examiner relies upon *Bloomberg* for its alleged teaching that a typical sub-sampling operation involves dividing an image into square blocks of pixels and then selecting a predetermined pixel from each block, resulting in a sampling of every Nth pixel from the original image. However, the applicant submits that the combination is not proper and should be withdrawn.

Specifically, *Huang* discloses a system for detecting a predefined pattern in an input image. *Huang* determines whether a pixel is in a foreground or in the background based on the color of the pixel, wherein a pixel is determined to be a foreground pixel if it is one of a group of predetermined colors. See column 7, lines 20 – 27. Each foreground pixel is then assigned a value from 1 to 7 based on its color, and the background pixels are assigned a value of 0. See column 7, lines 59 – 61. The Examiner acknowledges that *Huang* does not teach that every N pixel from an edge is used for such determination. See paragraph 6 of the Office Action

dated July 19, 2006. The Examiner tries to overcome this deficiency by combining *Huang* with *Bloomberg*.

However, *Bloomberg* is not related to *Huang*. *Bloomberg* relates to rapidly characterizing images so as to discriminate character from image areas. See column 1, lines 1 – 9. The purpose for the discrimination is to use the most effective processing techniques for each such discriminated area.

Accordingly, one confronted with problems related to defining predefined patterns, such as taught by *Huang* would not be motivated to look at the *Bloomberg* reference, which is used for different reasons. Accordingly, applicant submits that the combination is improper and the rejection should be withdrawn.

Claims 3 and 9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over *Huang* in view of U.S. Patent No. 5,687,252, hereinafter *Kanno*. The Examiner relies upon *Kanno* for its teaching of a number of different binarization processes that may be carried out in order to binarize image data. However, *Kanno* does not overcome the deficiency of the remaining references with regard to the rejections set forth and discussed above. *Kanno* describes binarization by considering pixels around a target pixel by using a plurality of threshold values. *Kanno* does not disclose how to select the pixels around the target pixel.

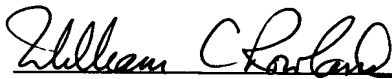
Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejections of claims 1 – 3, 5 – 9, 11, 12 and 22-24 in view of the foregoing amendments and remarks.

In the event that there are any questions concerning this response, or the application in general, the Examiner is respectfully urged to telephone the undersigned attorney so that prosecution of the application may be expedited.

Respectfully submitted,

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